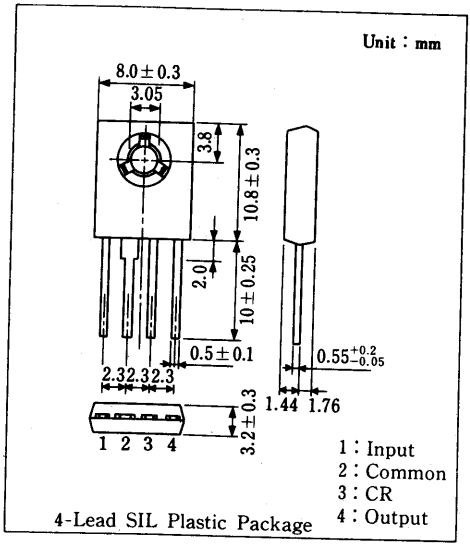
AN6540

Terminal Voltage Regulator with Adjustable Rise Time

Outline

AN6540 is an integrated circuit designed for a 4-terminal ge regulator with adjustable rise time. A capacitor s any setting of output voltage rise time and reduced at power on, and are best suited for power circuits with nt capacity up to 240mA. It can be used up to the mum input/output Voltage difference 0.3V (typ.).

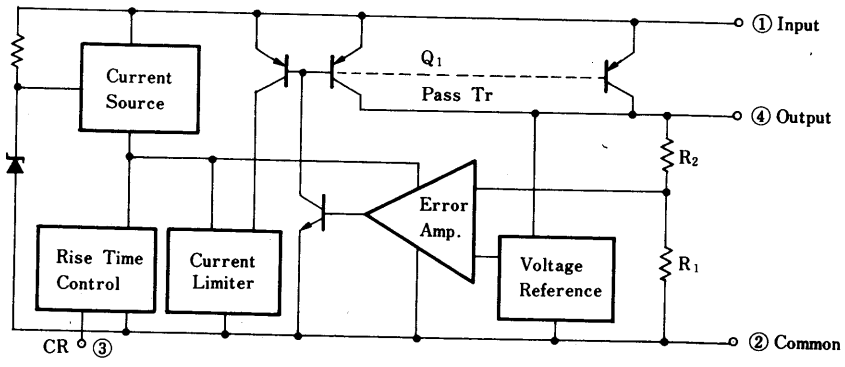


4-Lead SIL Plastic Package

Features

- dropout voltage : 0.3V (typ.)
- trol of output voltage rise time
- rnal short-circuit protection
- temperature coefficient of output voltage

ck Diagram



■ Absolute Maximum Ratings (Ta=25℃)

Item	Symbol	Rating	Unit
Supply Voltage	V_{CC}	20	V
Supply Surge Voltage	V_{surge}*	40	V
Power Dissipation (Tc=25℃)	P_D	6	W
Operating Ambient Teperature	T_{opr}	−30～+80	℃
Storage Temperature	T_{stg}	−40～+150	℃

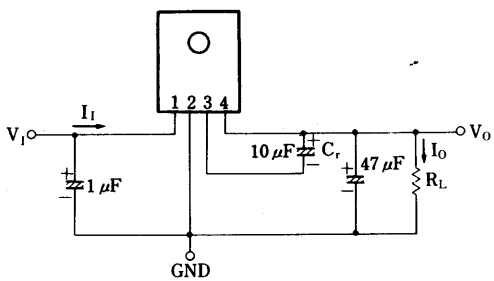
*t=200ms

■ Electrical Characteristics (Ta=25℃)

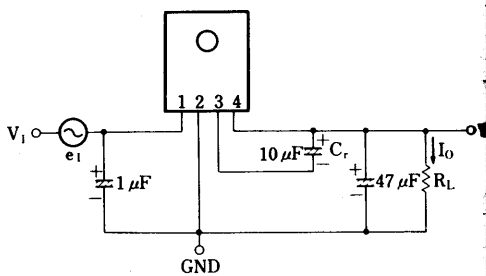
Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Un
Output Voltage	V_O	1	V_I=13.2V, I_O=200mA	8.1	8.5	8.9	V
Bias Current	I_{Bias}	1	V_I=13.2V, I_O=200mA		25	50	m
Load Regulation	ΔV_1	1	V_I=13.2V, I_O=0～200mA			±50	m
Input Regulation	ΔV_2	1	V_I=9.5～16V, I_O=100mA			±50	m
Output Voltage Temperature Coefficient	$\Delta V_O/T_a$	1	V_I=13.2V, I_O=100mA, T_{opr}=−30～+80℃		±0.01		%
Minimum Input/Output Voltage Difference	$V_{DIF(min.)}$	1	Input/Output Voltage Difference with Input Voltage 8.0V, I_O=100mA		0.3	0.6	
Ripple Rejection Ratio	RR	2	V_I=13.2V, I=100mA, f=100Hz, e_{in}=1V_{P-P}	50			d
Maximum Output Current	$I_{O(max.)}$	1	V_I=13.2V	240		600	m
Output Short Current	I_{OS}	1	V_I=13.2V	50		160	m
Rise Time	t_r	1	C_r=10μF±10%	0.5	1	2	

Note) After the load short, return with I_O=230mA or over.

Test Circuit 1 (V_O, I_{Bias}, ΔV_1, ΔV_2, $\Delta V_O/Ta$, $V_{DIF(min.)}$, $I_{O(max.)}$, I_{OS}, t_r)



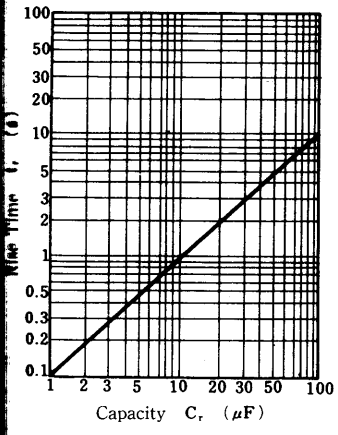
Test Circuit 2 (RR)



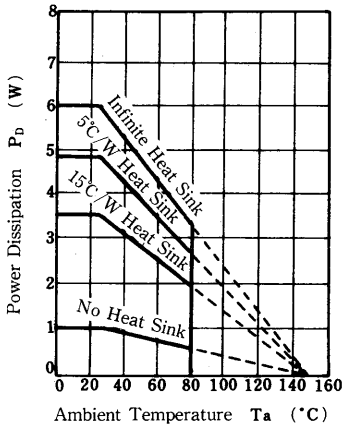
Note) Use a capacitor 47μF for checking the oscillation which reduces little in capacity even at a low temperature. For example, use the tantalum capacitor.

Note) T_j=25℃

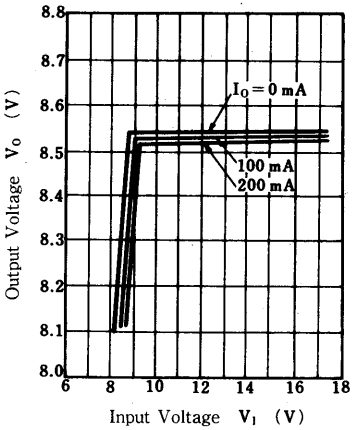
$t_r - C_r$



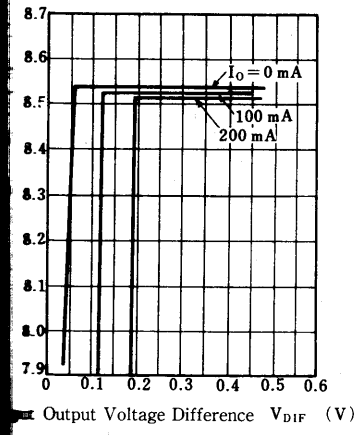
$P_D - Ta$



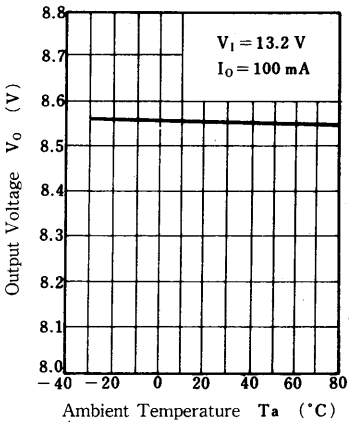
$V_O - V_I$



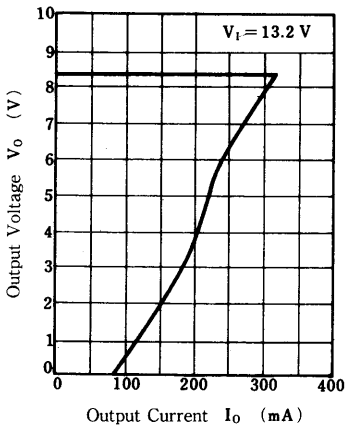
$V_O - V_{DIF}$



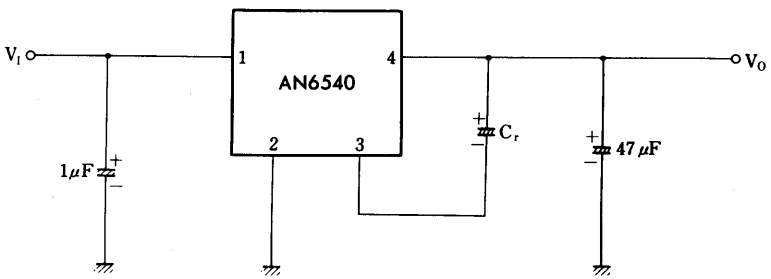
$V_O - Ta$



$V_O - I_O$



■ Basic Regulator Circuit



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